



**Dynamic Design: A Collection Process**  
**It Began with Apollo**

**Student Text Supplement**

# Dynamic Design: A Collection Process

It Began with Apollo



*Apollo 11*

NASA

## Solar Wind Collection Experiment

### Apollo 11



*Apollo 11 Mission Patch*

NASA

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*Buzz Aldrin*

NASA

**Aldrin: “Okay. You can make a mark, Houston.” (Garbled)**

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**McCandless: “Roger. Solar wind.”  
(Pause)**



*Bruce McCandless*

NASA



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NASA

**[As per his checklist, Neil stops to take a pair of pictures  
of Buzz with the Solar Wind Collector.]**

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Buzz Aldrin

NASA

Aldrin: “And, incidentally, you can use the shadow that the staff makes to assist you getting it perpendicular.” (to the sun line) (Garbled)

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**McCandless: “Roger.” (Long pause)**



*Bruce McCandless*

NASA



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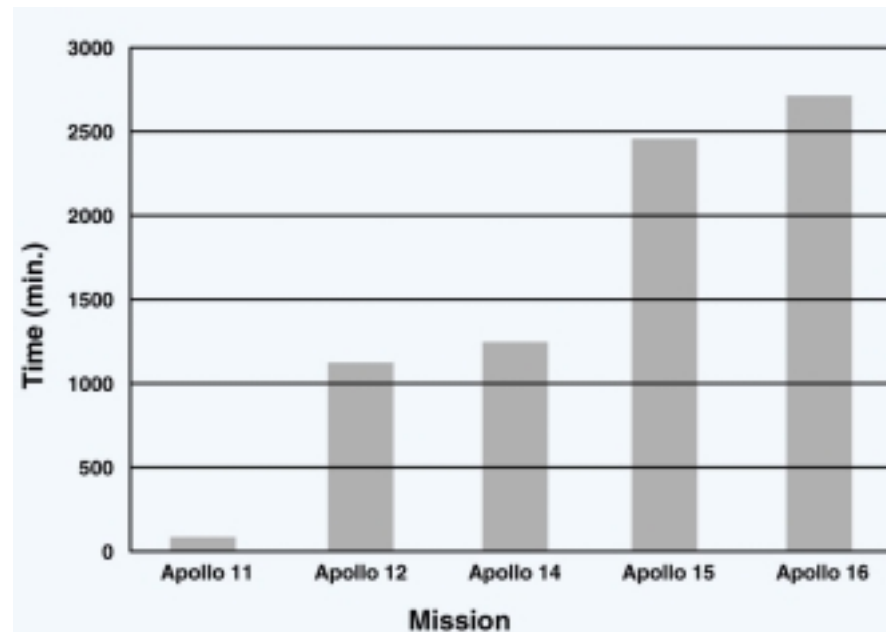
Buzz Aldrin

NASA

[Aldrin, from the 1969 Technical Debrief]: “In putting [the SWC pole] in the ground, it went down about 4 or 5 inches. It wasn’t quite as stable as I would have liked it to have been, but it was adequate to hold it in a vertical position...Once you go past a depth of 4 or 5 inches, the ground gets quite hard. However, I didn’t get much of a cue to this at this point while installing the solar wind experiment.”

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The Apollo collector device foils were exposed for different durations. It was exposed for 77 minutes on Apollo 11, 18 hours, 42 minutes on Apollo 12, 21 hours on Apollo 14, 41 hours, 8 minutes on Apollo 15, and 45 hours, 5 minutes on Apollo 16.

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Buzz Aldrin

NASA

Aldrin: “The solar wind disengaged from its staff quite easily. When it rolled up, it had a tendency to sneak off to the side and crinkle on the edges. I spent some 20 to 30 seconds unrolling it and trying to get it a little smoother. I then remembered that they really didn’t care about exact neatness. All they wanted was the material back, because they were going to cut it up in many pieces anyway. So I just bunched it together and it slid into its container (the Teflon™ bag) fairly easily.”

## Solar Wind Collection Experiment

### Apollo 12



*Apollo 12 Mission Patch*

NASA

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Alan Bean

NASA

Bean: “Solar wind doesn’t like to roll up much. (Pause) Little rascal, doesn’t want to roll up. (I’ll) just wrap it around here best I can, without getting any dirt on it.”  
(Pause)

“Okay, we got that solar wind.”



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Pete Conrad

NASA

Conrad: “Good boy!”

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Alan Bean

NASA

**Bean: “Houston, we got that solar wind, but it didn’t roll up in a very neat package.”**

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*Launch Control Center, NASA Kennedy Space Center*

**Gibson: “Roger, AI. We copy. That’s all right.”  
(Long pause)**

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*Pete Conrad*

NASA

**Conrad: “Hey, it sure didn’t, did it?”**

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Alan Bean

NASA

**Bean: “No. It just didn’t. It split right near the top.”**



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*Pete Conrad*

NASA

Conrad: “Can I help you?”

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Alan Bean

NASA

Bean: “Yeah. You can hold that, and I’ll just try to roll it up as best I can without getting any...I already got a little dirt on it that’s not doing any good. (Pause) You see what I mean?”

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*Pete Conrad*

NASA

Conrad: “Yeah.”

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Alan Bean

NASA

Bean: “Not a lot I can do about it. I’m sure it’s [the solar wind] a good experiment. That thing is fragile.”

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*Pete Conrad*

NASA

**Conrad: “Here, let me hold this end, and you just wrap it tight. That a boy.”**



## Dynamic Design: A Collection Process

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Alan Bean

NASA

Bean: “I’ll squeeze it down.”

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*Pete Conrad*

NASA

Conrad: “That a...”

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Alan Bean

NASA

**Bean: “And chase down any of those noble gases or whatever that crud is. Okay. Stick that in there? (To Gibson) Looks bad, but I think it will do the job, Houston. We squashed it in so it’s...”**

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*Pete Conrad*

NASA

Conrad: “Where is it [the bag]?”

## Dynamic Design: A Collection Process

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*Alan Bean*

NASA

**Bean: “It’s right...Let me get it for you.”**



# Dynamic Design: A Collection Process

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*Launch Control Center, NASA Kennedy Space Center*

**CapCom: “Roger, Al.”**

## Dynamic Design: A Collection Process

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Alan Bean

NASA

**Bean: “There you go. Okay. It just doesn’t look so good, Houston.”**

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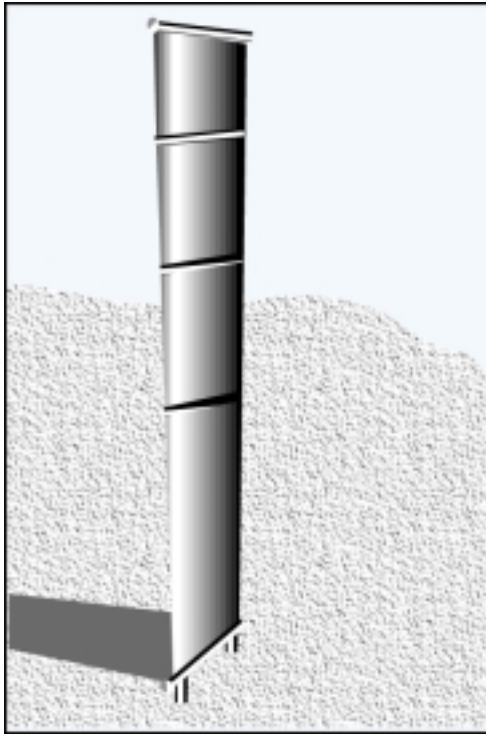
Alan Bean

NASA

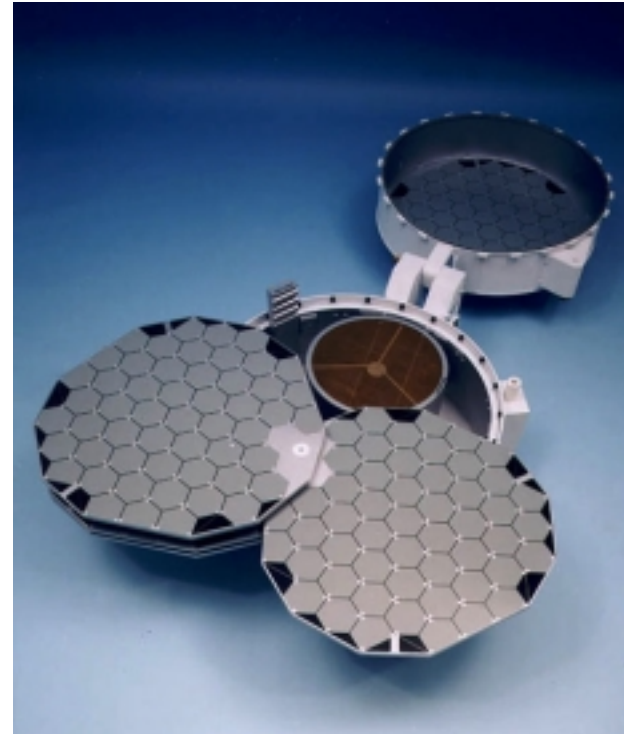
[Alan Bean during his technical debrief]: “I would like to recommend that, before the next flight goes up, somebody take a look at what is actually happening to that foil as it sits out in the lunar environment. It may not be the foil that’s presenting the problem. It might be (that) the tape that they are using on it actually cracks or gets stiff or something. It may be the same effect they are seeing in those Teflon™ bags.”

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*ApolloType Solar Wind Collector Foil* McREL



*Genesis mission collector arrays and concentrator* NASA